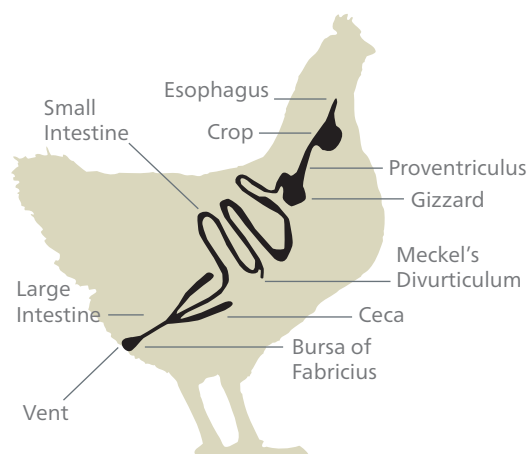




Abdomen Abnormalities



<p>Unhealed Navel</p> <p>Unhealed navel or yolk sacculitis. The navel is swollen and inflamed and there may be a scab in the navel area. When the abdomen is opened the yolk sac is not properly absorbed, is congested, may contain solidified pieces of yolk and may be a darker off colour.</p> <p>Possible causes: <i>E. coli</i>, <i>Staphylococci</i>, <i>Pseudomonas</i> species, <i>Proteus</i> species</p>	<p>Yolk Sacculitis</p> <p>Abdominal air sacs/peritonium are thickened and may be covered with thin film of fibrous material. Foamy white mucus may also be present in the internal space of the air sac. Could also be accompanied by; the heart and/or liver being covered with a thin film of white fibrous material.</p> <p>Possible causes: <i>E. coli</i>, <i>Mycoplasma</i> species, <i>Chlamydophila psittaci</i>, Avian influenza, New Castle disease</p>	<p>Drop (pendulus) Crop</p> <p>The crop is swollen and filled with feed. The bird may continue to eat but feed transit is impacted.</p> <p>Possible causes: <i>Candida albicans</i>, Heat stress, Genetics</p>	<p>Crop Mycosis</p> <p>The walls of the crop are thickened and have focal raised, corrugated and white areas that cannot be easily removed. In severe cases there can be shallow ulcer and/or dying tissue that is easily removed.</p> <p>Possible causes: <i>Candida</i> species, <i>Trichomonas</i></p>	<p>Gizzard Impaction</p> <p>The gizzard may be swollen and "rock" hard. Usually, there would appear to be no feed in the intestine. The gizzard and the intestine may also be tinted green with bile from the gall bladder if the bird has not been eating feed.</p> <p>Possible causes: Litter eating, Foreign material, Contaminated feed, Electrolyte imbalance, Mycotoxins (e.g. Fumonisin)</p>	<p>Enlarged Proventriculus</p> <p>The proventriculus is swollen with thin muscle walls. This may also be accompanied by a small gizzard possibly with ulcers.</p> <p>Possible causes: Excessive histamine amounts, Finely ground diet</p>	<p>Mycotoxins</p> <p>Deep lesions may appear in the proventriculus, gizzard and intestine. Swelling and bleeding may be noted in more severe cases. The liver and kidneys may also be swollen and discoloured.</p> <p>Possible causes: Contaminated grains used as foodstuffs, high humidity and moisture in food storage area</p>
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Upper Intestine

<p><i>E. acervulina</i> – LS 3 – Outside Gut</p> <p><i>Eimeria acervulina</i>. Transverse white to grey striations are visible on the intestinal walls from the outside and inside of the upper intestine. The intestinal walls may also be thickened. <i>Eimeria mitis</i> may present similar lesions but this species is less common. The transverse striations contain many of the microscopic <i>E. acervulina</i> parasites.</p>	<p><i>E. acervulina</i> – LS 3 – Inside Gut</p>
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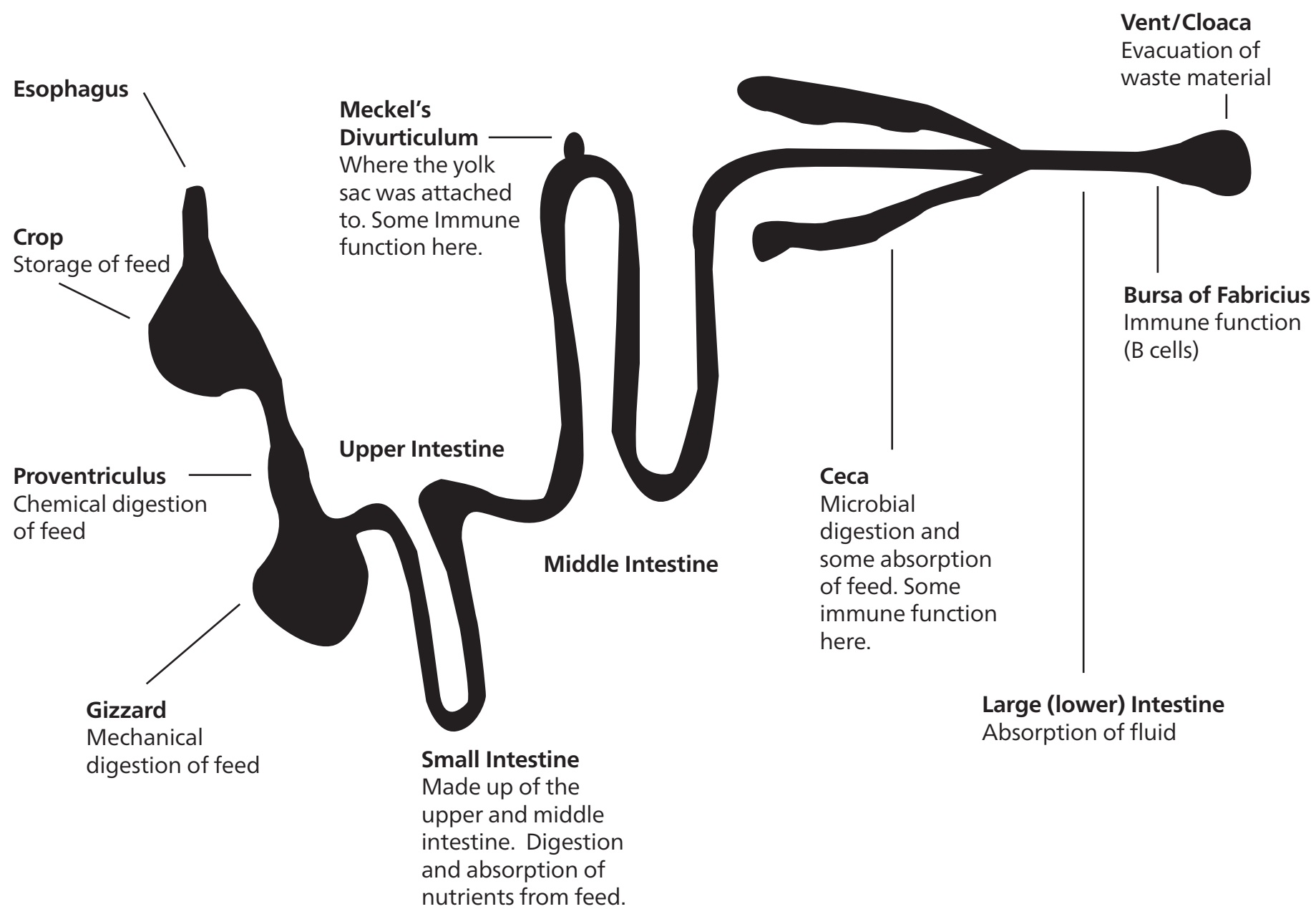
Middle Intestine

<p>Roundworm</p> <p>Flat worms (tape worms) or large round worms (Ascarids).</p>	<p>Necrotic Enteritis</p> <p>The intestine is swollen with a thin walls covered with a brownish membranes. The intestinal contents are a mucous, foul-smelling brown fluid.</p> <p>Possible causes: <i>Clostridium perfringens</i></p>	<p>Deep Ulcers</p> <p>Ulcers are found on the intestinal surface and may be oval or round. In severe cases, the intestine may contain blood (mimic the look of coccidiosis) and/or the abdominal wall membrane may be swollen.</p> <p>Possible causes: Ulcerative enteritis, Mycotoxins</p>	<p><i>E. necatrix</i> – LS 4 – Outside Gut</p> <p><i>Eimeria necatrix</i>. Swelling and thickening of the intestinal wall with many white to yellow spots. There is also congestion, hemorrhage, blood and necrosis. There may be bloody feces. This species of <i>Eimeria</i> usually is seen in longer-lived chickens. The white to yellow spots contain many of the microscopic <i>E. necatrix</i> parasites.</p>	<p><i>E. necatrix</i> – LS 4 – Inside Gut</p>	<p><i>E. maxima</i> – LS 2 – Outside Gut</p> <p><i>Eimeria maxima</i>. Swelling and thickening of the intestinal wall with many small red spots. The intestinal content may be bloody.</p>	<p><i>E. maxima</i> – LS 3 – Inside Gut</p>
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Lower Intestine, Ceca, Bursa of Fabricius

<p><i>E. brunetti</i> – LS 3 – Outside Gut</p> <p><i>Eimeria brunetti</i> swelling in the lower intestine. The outside of the lower intestine looks like it has vertical folds. In severe cases there may be ladder-like hemorrhages in the lower intestine as well as cheesy-like debris.</p>	<p><i>E. brunetti</i> – LS 4 – Inside Gut</p>	<p>Cecal Worms</p> <p>Small, thread-like worms. These worms are not considered a major threat on their own but may be a vector for the parasite <i>Histomonas meleagridis</i>.</p>	<p>White Cecal Core</p> <p>Small to large cheesy looking cecal cores (usually filled with fibrin) that are usually white but can be slightly yellow, gray or green looking. The cecal walls are usually swollen.</p> <p>Possible causes: <i>Histomonas meleagridis</i>, <i>E. tenella</i>, <i>Salmonella pullorum</i>.</p>	<p><i>E. tenella</i> - LS 4 – Outside Ceca</p> <p><i>Eimeria tenella</i>. White cecal cores are often seen in addition to hemorrhaging during the early stages of infection. The cecal core would be filled with the parasites.</p>	<p><i>E. tenella</i> – LS 4 – Inside Ceca</p>	<p>Light Brown/Orange Tinged Mucus in Ceca</p> <p>Ceca looks normal from the outside. When ceca opened, light brown/orange mucus with bubbles.</p> <p>Possible causes: Improper protein digestion early in the intestinal tract, A high level of fat in the diet</p>	<p>Swollen Bursa</p> <p>The bursa is swollen with fluid within the membranes. There may be some small hemorrhages. During a severe infection cheese-like material may be found inside the bursa. Sometimes may be accompanied by increased mucus in other parts of the intestine.</p> <p>Possible causes: Infectious bursal disease, <i>Cryptosporidium baileyi</i></p>
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This poster is only a summary and not a completely inclusive list. Intestinal diseases and lesions may be caused by a multitude of factors. When a problem is suspected please contact your veterinarian.



Normal



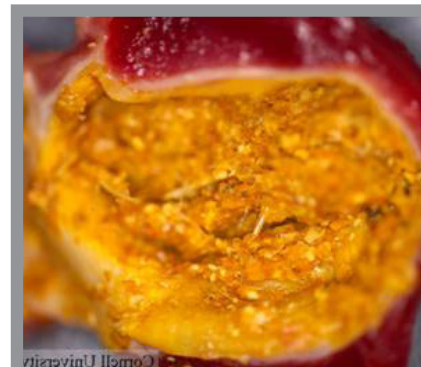
Air Sac



Crop



Proventriculus



Gizzard With Feed



Small Intestine and Meckel's Diverticulum



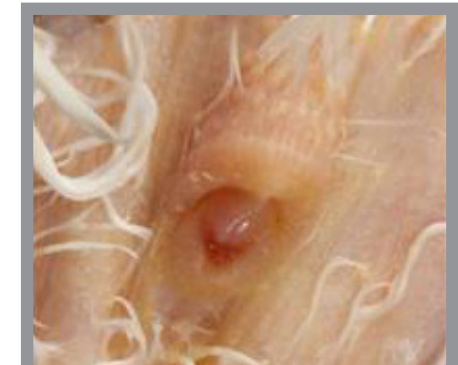
Lower intestine – normal red spots



Healthy Bursa Inside



Yolk Sac (should disappear by – 3 days old)



Vent

References used:

1. Avian Disease Manual, 7th edition. American Association of Avian Pathologists. Edited by: M. Boulianne with M.L. Brash, B.R. Charlton, S.H. Fitz-Coy, R.M. Fulton, R.J. Julian, M.W. Jackwood, D. Ojkic, L.J. Newman, J.E. Sander, H.L. Shivaprasad, E. Wallner-Pendleton, P.R. Woolcock.
2. The Merck veterinary manual.
3. Atlas of Avian Diseases. E. Bucles, J. Ruiz, A. Torres, A. Banda, S. Mondal and B. Lucio-Martinez.
4. Kayla Price personal picture references.
5. Pannon Poultry Services (*E. acervulina* and *E. maxima* pictures)